



THE UTILITY OF SMARTVEST IN A PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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INTRODUCTION: In response to the COVID-19 pandemic, the Centers for Medicare and Medicaid Services (CMS) provided greater flexibility for physicians to prescribe high frequency chest wall oscillation (HFCWO) therapy to Medicare beneficiaries. This case presents a patient that was able to receive HFCWO because of the CMS waiver.

CASE PRESENTATION: This case presents a 71-year-old male with long-standing, well-controlled HIV and severe COPD with chronic bronchitis, who required 2 LPM of oxygen. The patient did not have a history of bronchiectasis. Social history was positive for smoking tobacco use at 31 pack years, having quit at the age of 45. Past medical history was significant for left-sided pneumonectomy as a child.

The patient endorsed a frequency of two COPD exacerbations every 6-months for three years, despite compliant use of Trelegy Ellipta Inhaler, acapella therapy twice daily, n-acetylcysteine nebs twice daily, and being up-to-date with vaccinations. He was unable to participate in pulmonary rehab due to being confined to a wheelchair after a leg injury. His pulmonary function tests were consistent with severe obstruction and had fallen from 59% of predicted to 49% of predicted within a one-year timeframe. He reported production of daily thick phlegm that was difficult to expectorate. Due to this, the patient was started on HFCWO therapy twice per day with the SmartVest Airway Clearance System. The patient was followed for 6 months, at which point he reported that he was able to clear his secretions more effectively and did not have any COPD exacerbations since starting the therapy.

CT Chest without contrast: Surgical changes of left pneumonectomy with leftward mediastinal shift and elevation of the left hemidiaphragm. The right lung appears clear.

Pre-HFCWO		
	Pre (% of Pred.)	Post (% of Pred.)
FEV	52%	51%
FEV1	48%	49%
FEF 25-75	40%	53%

Post-HFCWO		
	Pre (% of Pred.)	Post (% of Pred.)
FEV	57%	61%
FEV1	49%	56%
FEF 25-75	32%	46%

DISCUSSION: The patient was placed on HFCWO twice per day to help with airway clearance of his mucous hypersecretions in an effort to decrease the frequency of COPD exacerbations. Previously, the patient reported two exacerbations every 6-months for three years despite being adherent to his medication and therapy regimen, which led to a decrease of his FEV1 by 10%. HFCWO helped the patient to clear his secretions more effectively, which led to a decreased frequency of COPD exacerbations and stabilization of lung function.

CONCLUSION: The use of SmartVest in patients with chronic bronchitis phenotype of COPD helps to decrease COPD exacerbations.

REFERENCES:

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